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#### **ABSTRACT**

This pamphlet provides suggestions for students concerning how to best use and interpret educational research. Students should recognize that there is nothing wrong with questioning research. Among the myths that must be challenged are that if something is published, it must be true, and that scientists are objective and uninfluenced by societal attitudes and their own prejudices. For example, there is evidence that many boys and girls have different mathematics experiences, but there is no evidence that sex differences in mathematics are natural or inherent. Myths go unchallenged because: people are more comfortable with the status quo; those who believe stereotypes probably will not accept research that challenges such beliefs; and many people accept or reject research without evaluating its quality. To evaluate research, a student should begin by asking whether: (1) the researchers' opinions can be told by reading the study; (2) conclusions are based on study results or the researcher's expectations; (3) the research tells precisely who was studied; and (4) the study makes sense. Students can evaluate and use research better by: checking the "facts" for themselves; not quoting facts without checking their accuracy; reading an entire study and not just the summary; being equally skeptical of research t' it does and research that does not seem right; finding out how to question authority in ways that provide information and not irritation; and looking at their own biases critically. (SLD)

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# Says Who? Research, 3 Authority, and Me

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A Guide for Students

## Why Question Research?

There is nothing wrong with "questioning authority," with looking for your own answers. You have a responsibility to yourself and others to examine the evidence before making up your own mind or accepting the conclusions of others.

To question means being willing to search for answers and to accept that no one is right every time.

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## Research Rebels

There have always been individuals who have questioned authority and looked for their own answers. By challenging the accepted, these people risked ridicule, professional isolation, and in some cases, death. Past research rebels include

Galileo, who was condemned to death for maintaining that the earth revolved around the sun when everyone in his society believed the sun revolved around the earth

#### and

 Louis Pasteur, who w s ridiculed for believing that invisible creatures (now called germs) could cause disease

#### Today's research rebels include

 Evelyn Fox Keller, a biophysicist whose exploration of the nature of science is expanding the definitions of science to include subjectivity and feelings

#### and

Steven Jay Gould, a natural scientist whose examination of research done on race and intelligence found that "scientific proof" of racial inferiority was based primarily on deliberate or unconscious efforts to make people of color appear less intelligent than whites



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## What Don't We Know?

With all the information available, it often seems that most questions have already been answered. Nothing could be further from the truth. Just a few of the wide range of questions left to be answered are listed below.

#### In Education and the Social Sciences

- What does it mean "to think"? Can machines be designed to think?
- How do people think? Why are some people more effective thinkers than others?
- Is teaching an art or a science? What role does training play in making a person an excellent teacher?

#### In the Physical and Social Sciences

- What is the origin of the universe?
- Does the Loch Ness monster exist? What could be considered "proof" of its existence?
- What are the "black holes" in space? What happens to the energy that "disappears" into them?



### What Can We Do?

- I. Remember that statements beginning "Everyone knows" and "Researchers agree" may not be true. Ask "Whose study are you quoting and when was it done?" Check the "facts" for yourself.
- II. Don't quote "facts" without checking their accuracy.
- III. If you read a research study, read the whole article, not just the summary.
- IV. Don't fall into the trap of thinking, "If I agree with it, it must be true." Be equally skeptical of research that seems right and research that doesn't.
  - V. Talk with others about how you can "question authority" in ways that provide information, not irritation. If you find biased research, point it out to your teacher and other students. Consider writing to the authors and publishers of the study as well.
- VI. Look at ways your own biases affect decisions you make about your education and about other areas.



# Why Research Myths Go Unchallenged

Myths go unchallenged for many reasons, including:

- Most people, including researchers, are more comfortable with the status quo and are much more apt to accept research that supports what they already believe.
- If people believe stereotypes (such as "women are the weaker sex"), they probably won't accept research that challenges those beliefs, no matter how good it is.
- Many people either accept or reject research but do not evaluate its quality.

Perhaps you think you could not even begin to evaluate research. You can! Answering the following questions at out research studies is a good start.

- Can you tell the authors' opinions by reading the study? If you can, the study may be biased.
- Are conclusions based on the study's results or on the authors' expectations? If the conclusions go beyond the results, they are unlikely to be accurate.
- Does the research tell precisely who was studied? Are the conclusions correctly applied only to people like those who were studied?
- Does the study make sense to you?



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## For More Information

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This brochure is one of a series written to acquaint people with bias in research. The brochures and The Hidden Discriminator: Sex and Race Bias in Educational Research, a nontechnical monograph on bias in research, are available from the Women's Educational Equity Act Publishing Center, Education Development Center, 55 Chapel Street, Newton, Mass. 02160, 800-225-3088 (in Mass. call 617-969-7100).

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